ATOC90010 Statistics in Climate Dynamics

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: April, Parkville - Taught on campus. This subject is taught through the Victorian Institute of Earth and Planetary Sciences: https://vieps.earthsci.unimelb.edu.au/.
Time Commitment:	Contact Hours: 24 hours of lectures and 18 hours of practicals Total Time Commitment: 170 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	Some knowledge of introductory statistics and climate dynamics.
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability
Coordinator:	Assoc Prof Kevin Walsh
Contact:	**kevin.walsh@unimelb.edu.au (mailto:kevin.walsh@unimelb.edu.au)**
Subject Overview:	The subject will outline basic statistical methods for analyzing climate dynamics, with the aim of understanding the physical mechanisms driving the observed structures . The subject will start with the principles of decision making in statistical anlaysis (significance tests), will then dicsuss the basics of probability theory, time series, stochastic models and multi-variate data (pattern) analysis. The focus here will not be on deriving statistical parameters, but will rather be on discussing how these methods could be applied and what the potential pitfalls in interpreting the statistical results could be.
Learning Outcomes:	# An ability to calculate and interpret the main modes of variability in the climate system; # an ability to assess the statistical significance of climate variations and variables and to relate these to inferences about the behaviour of the climate system.
Assessment:	Practical exercises and problem sets due throughout the teaching period (60%) and an oral examination due in the week beginning 7 June 2016 (40%).
Prescribed Texts:	None
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	# Developing the ability to exercise critical judgement # rigorous and independent thinking

	# adopting a problem-solving approach to complex or ambiguous questions; # high-level written report presentation skills; oral communication and presentation skills.
Related Course(s):	Master of Science (Earth Sciences)
Related Majors/Minors/ Specialisations:	Earth Sciences Honours Program - Earth Sciences